



KIESELMANN
FLUID PROCESS GROUP

Operating instructions

- Translation of the Original -

Vacuum valve

Type 6161

weight-loaded
DN 50 - DN 250



English **GBR**

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2. General safety instructions

2.1 Information for your safety

We are pleased that you have decided for a high-class KIESELMANN product. With correct application and adequate maintenance, our products provide long time and reliable operation.

Before installation and initiation, please carefully read this instruction manual and the security advices contained in it. This guarantees reliable and safe operation of this product and your plant respectively. Please note that an incorrect application of the process components may lead to great material damages and personal injury.

In case of damages caused by non observance of this instruction manual, incorrect initiation, handling or external interference, guarantee and warranty will lapse!

Our products are produced, mounted and tested with high diligence. However, if there is still a reason for complaint, we will naturally try to give you entire satisfaction within the scope of our warranty. We will be at your disposal also after expiration of the warranty. In addition, you will also find all necessary instructions and spare part data for maintenance in this instruction manual. If you don't want to carry out the maintenance by yourself, our KIESELMANN service team will naturally be at your disposal.

2.2 Marking of security instructions in the operating manual

Hints are available in the chapter "safety instructions" or directly before the respective operation instruction. The hints are highlighted with a danger symbol and a signal word. Texts beside these symbols have to be read and adhered to by all means. Please continue with the text and with the handling at the valve only afterwards.

Symbol	Signal word	Meaning
	DANGER	Imminent danger which may cause severe personal injury or death.
	ATTENTION	Dangerous situation which may cause slight personal injury or material damages.
	NOTE	Marks application hints and other information which is particularly useful.

2.3 Designated use

The fitting is designed exclusively for the purposes described below. Using the fitting for purposes other than those mentioned is considered contrary to its designated use. KIESELMANN cannot be held liable for any damage resulting from such use. The risk of such misuse lies entirely with the user. The prerequisite for the reliable and safe operation of the fitting is proper transportation and storage as well as competent installation and assembly.

Operating the fitting within the limits of its designated use also involves observing the operating, inspection and maintenance instructions.

2.4 Personnel

Personnel entrusted with the operation and maintenance of the tank safety system must have the suitable qualification to carry out their tasks. They must be informed about possible dangers and must understand and observe the safety instructions given in the relevant manual. Only allow qualified personnel to make electrical connections.

2.5 Modifications, spare parts, accessories

Unauthorized modifications, additions or conversions which affect the safety of the fitting are not permitted. Safety devices must not be bypassed, removed or made inactive. Only use original spare parts and accessories recommended by the manufacturer.

2.6 General instructions

The user is obliged to operate the fitting only when it is in good working order. In addition to the instructions given in the operating manual, please observe the following:

- relevant accident prevention regulations
- generally accepted safety regulations
- regulations effective in the country of installation
- working and safety instructions effective in the user's plant.

3. Safety instructions

3.1 Field of application

This vacuum valve is used to prevent underpressures in tanks and vessels for food and beverage industry, pharmaceutical and chemical industries as well as in biotechnology.



ATTENTION

- To avoid danger and damage, the fitting must be used in accordance with the safety instructions and technical data contained in the operating instructions.

3.2 General safety instructions



DANGER

- Dismantling the valve or valve assemblies from the plant can cause injuries from fluids or gases flowing out. Dismantle the valve or valve assembly only when the plant has been rendered pressure-less and free of liquid and gas.
- Referring to the used sealing materials the vacuum valves are suitable for a minimum operating temperature at -10 °C. An operation at low process or ambient temperatures may affect the safety function. Therefore, appropriate measures shall be taken for an operation at temperatures below +5 °C.



ATTENTION

- The action of external force on the lever mechanism results in changes in the opening characteristics. This can result in damage to the tanks.
- Internal or external dirt may impair the function of the fitting or the safety equipment. Therefore the fitting must be operated in a way that protects it from external influences and it must be cleaned and maintained at regular intervals.
- Remove transport insurance before initial operation.
- Follow the instructions of the welding guidelines.

3.3 General notes



NOTE

All data are in line with the current state of development. Subject to change as a result of technical progress.

4. Function

4.1 Description of function

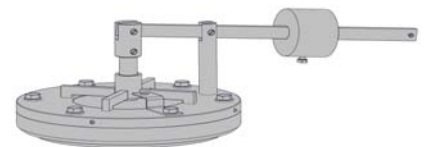
The function of the vacuum valve is to prevent inadmissible pressure shortfalls (≤ 1 bar absolute pressure), in tanks and containers, which can result in damage. At underpressure, the valve opens to the atmosphere. The pressure in the tank is brought to the atmospheric pressure by the inflowing air. When the pressures become equal, the valve closes by the force of its weight without any external energy. The flow capacities referred to the relevant underpressure are shown in the capacity diagram (see "13. Performance chart" on page 8).

5. Installation informations

5.1 Installation instructions

Fitting position

The vacuum valve is generally to be installed vertically (see figure on the right).



5.2 Welding guidelines

Sealing elements integrated in weld components must generally be removed prior to welding. To prevent damage, welding should be undertaken by certified personnel (EN287). Use the TIG (tungsten inert gas) welding process.



NOTE

Impurities can cause damage to the seals. Clean inside areas prior to assembly.

6. Maintenance

6.1 Maintenance

The maintenance intervals depend on the operating conditions "temperature, temperature-intervals, medium, cleaning medium, pressure and opening frequency". We recommend replacing the seals every 2 years. The user, however should establish appropriate maintenance intervals according to the condition of the seals.



NOTE

EPDM; Viton; k-flex; NBR; HNBR
Silicone
Thread



Lubricant recommendation

Klüber Paraliq GTE703*
Klüber Sintheso pro AA2*
Interflon Food*

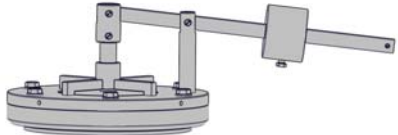
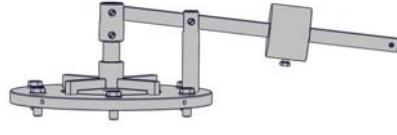
*) It is only permitted to use approved lubricants, if the respective fitting is used for the production of food or drink. Please observe the relevant safety data sheets of the manufacturers of lubricants.

6.2 Cleaning

A complete cleaning of all the parts that have come in contact with the product is only possible in the dismantled state.

The cleaning of the fitting surfaces that touch the product takes place with the tank cleaning. The cleaning of the external surfaces must be performed at regular intervals. The cleaning cycles are to be defined by the user.

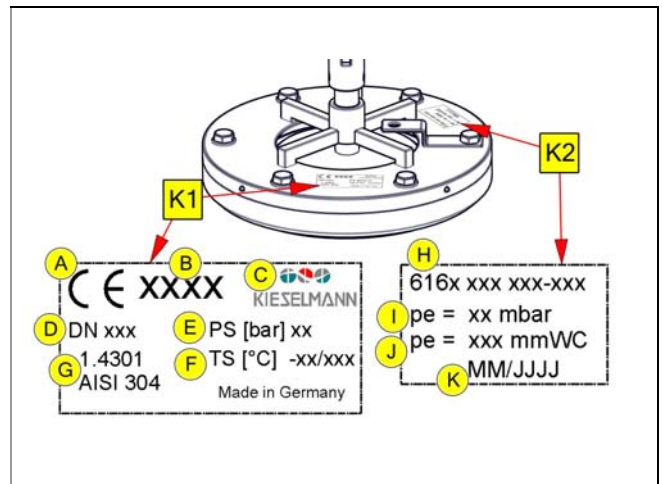
7. Technical Data

Model:	Aeration valve, weight-loaded		
Valve size:	DN 50 - DN 250		
Connections:	- Flange connection - Flange with welding end DIN EN 10357		
Temperature range:	-10° bis +60°C medium-dependent (note the general safety instructions 3.2 / page 3)		
Operating pressure:	DN50	=	8 bar
	DN65 - DN80	=	10 bar
	DN100 - DN250	=	16 bar
Material in product contact:	Stainless steel:	• 1.4301 / AISI304 • 1.4404 / AISI316L	
	Surfaces:	• Ra < 0,8µm mat finish	
	Seal material:	• DN50-DN200 NBR, VMQ (Silicone) • DN250 NBR, EPDM	
Flange with welding end		Flange connection	
			

8. Identification

A = Designation
 B = Notified body
 C = Manufacturer
 D = Nominal diameter
 E = max. allowable pressure
 F = min. / max. allowable Temperature
 G = Material
 H = Order number
 I = Set pressure in mbar
 J = Set pressure in mm WC (Water column)
 K = Date of manufacture

 K1= lasered
 K2= label



9. Pressure setting

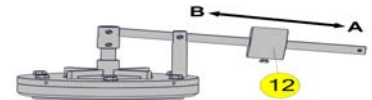
The vacuum valve is set at the factory, by correspondingly positioning the weight (12), to an underpressure of 3 mbar. At this underpressure, the valve opens to the atmosphere.



NOTE

If the position of the weight (12) is changed towards direction (B) (see fig. right), the closing function is not guaranteed any more.

If the position of the weight (12) is changed towards direction (A), then the water column (Wc) increase on the maximum water column $W_{c_{max}}$.



DN	50	65	80	100	125	150	200	250
	long lever / short lever							
Wc _{min.} (mm)	30	30	30	30	30	30 / 30	30 / 30	30 / 30
Wc _{max.} (mm)	150	50	200	150	240	320 / 120	125 / 100	370 / 80

10. Disassembly and assembly

10.1 Disassembly Pos. (4), (5)

- Unscrew the hexagon screws (15) and remove the flange (17).
- Remove the O-Ring (5) from the groove.
- Unscrew the set screw (8) and remove the complete valve plate from the housing (1).
- Clamp the complete valve plate at the outer diameter of plate (2) in the vise (with soft jaws).
- With a round rod M1, in the drilled hole (B), unscrew the bolt (7).
- Remove the O-ring (4) from the groove.
- Thoroughly clean of grease the thread in the bolt (7) and plate (2).

10.2 Assembly

- Thoroughly clean and slightly lubricate mounting areas and running surfaces. (see "6.1 Maintenance" on page 4).
- Assemble in reverse order.



NOTE

Secure the threaded joint of the bolt (7) and plate (2) with a removable screw locking device

Test proper performance in the operating state according to the specified performance data.

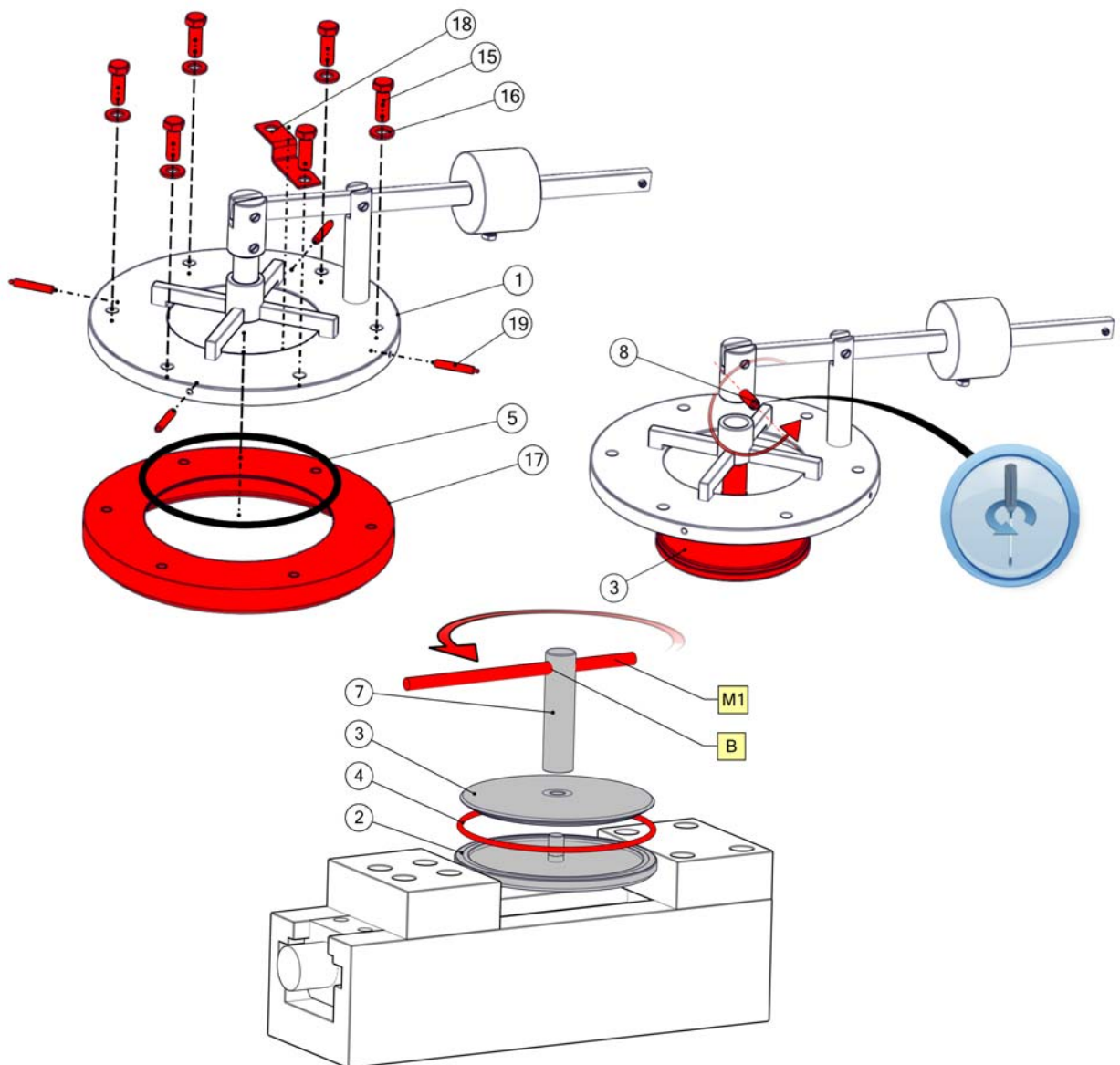


Fig. 1

11. Drawings and Dimensions

- 1) Housing
- 2) Plate bottom
- 3) Plate top
- 4) O-Ring
- 5) O-Ring
- 6) Plain bearing
- 7) Bolt
- 8) Set screw
- 9) Link
- 10) Lever
- 11) Set screw
- 12) Weight
- 13) Dowel pin
- 14) Hexagon screw
- 15) Hexagon screw
- 16) Disc
- 17) Flange
optional
- 18) Sensor mounting
optional
- 19) Heating cartridge
optional

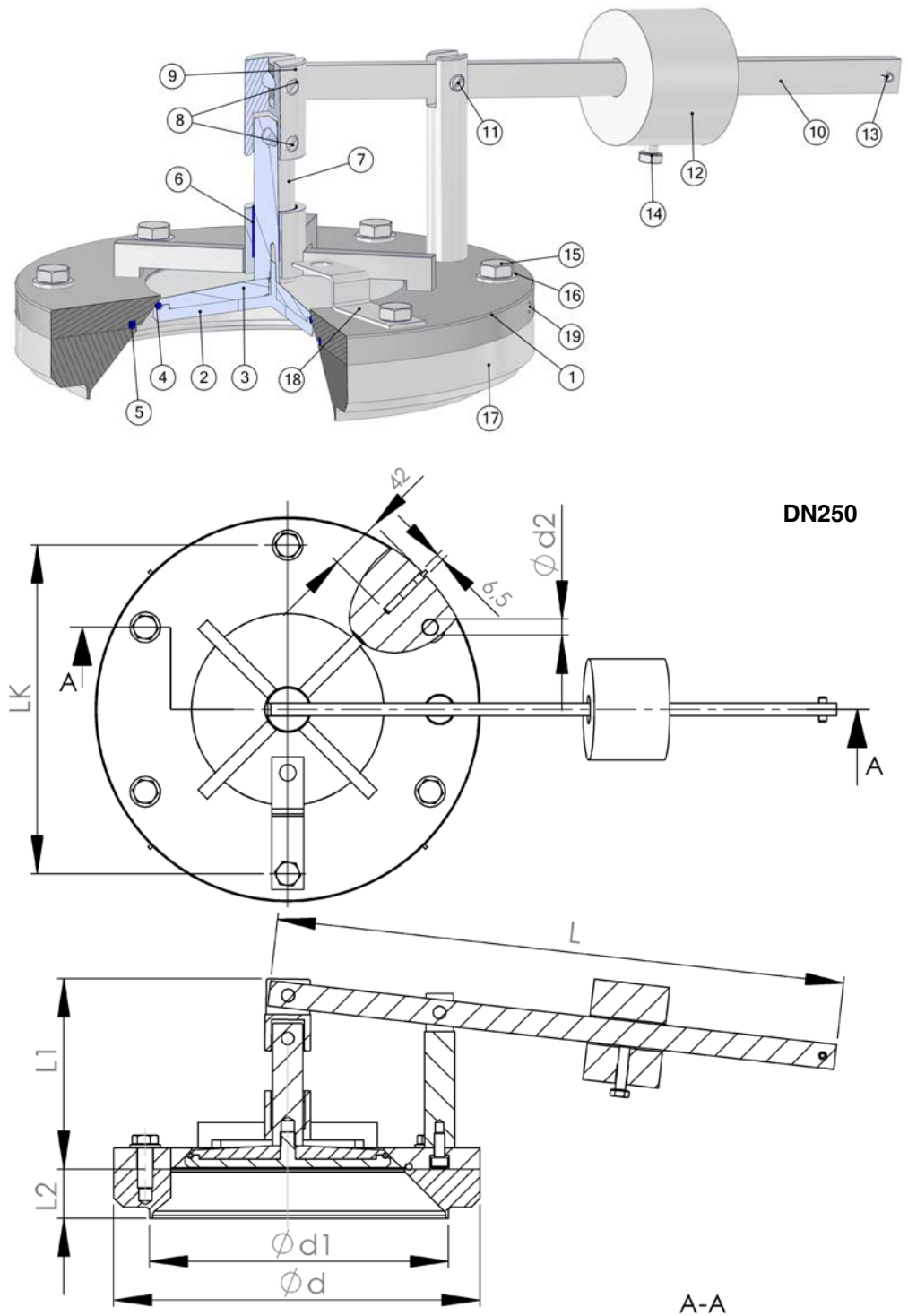


Fig. 2

	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250
	long lever / short lever							
L	240	250	350	350	450	680 / 450	700 / 450	700 / 500
L1	106	122	133	136	150	150	201	223
L2	28	29	34	30	38	39	40	55
d	Ø 129	Ø 154	Ø 204	Ø 204	Ø 254	Ø 304	Ø 326	Ø 406
d1	Ø 85x2	Ø 104x2	Ø 129x2	Ø 154x2	Ø 204x2	Ø 254x2	Ø 305x2,5	Ø 406x3
d2	Ø 6,4	Ø 8,5	Ø 8,5	Ø 8,5	Ø 13	Ø 13	Ø 13	Ø 13
Lk	Ø 115	Ø 130	Ø 160	Ø 180	Ø 230	Ø 260	Ø 300	Ø 355

Measures in mm

Tab.1

12. Spare Parts List

		DN							
		50	65	80	100	125	150	200	250
1	Housing	6161 050 002-02x	6161 065 002-02x	6161 080 002-02x	6161 100 002-02x	6161 125 002-02x	6161 150 002-02x	6161 200 002-02x	6161 250 002-02x
2	Plate bottom	6161 050 018-021	6161 065 018-021	6161 080 018-021	6161 100 018-021	6161 125 018-021	6161 150 018-021	6161 200 018-021	6161 250 018-021
3	Plate	6161 050 019-021	6161 065 019-021	6161 080 019-021	6161 100 019-021	6161 125 019-021	6161 150 019-021	6161 200 019-021	6161 250 019-021
4	O-Ring	2304 050 050-052 VMQ 70°Sh.	2304 065 050-052 VMQ 70°Sh.	2304 080 050-052 VMQ 70°Sh.	2304 100 050-052 VMQ 70°Sh.	2304 125 050-052 VMQ 70°Sh.	2304 150 050-052 VMQ 70°Sh.	2304 200 050-052 VMQ 70°Sh.	2304 250 050-054 EPDM 70°Sh.
5	O-Ring NBR 70°Sh.	2304 080 040-055	2304 090 035-055	2304 113 035-055	2304 130 045-055	2304 153 045-055	2304 180 050-055	2304 265 060-055	2304 300 040-055
6	Plain bearing	8050 015 010-060	8050 023 020-060	8050 023 020-060	8050 023 020-060	8050 023 020-060	8050 027 024-060	8050 034 030-060	8050 034 030-060
7	Bolt	6161 050 020-021	6161 065 020-021	6161 080 020-021	6161 100 020-021	6161 125 020-021	6161 150 020-021	6161 200 020-021	6161 250 020-021
8	Set screw (2x)	6161 050 022-020	6161 065 022-020	6161 065 022-020	6161 100 022-020	6161 125 022-020	6161 150 022-020	6161 200 022-020	6161 200 022-020
9	Link	6161 050 006-02x	6161 065 006-02x	6161 080 006-02x	6161 100 006-02x	6161 125 006-02x	6161 150 006-02x	6161 200 006-02x	6161 200 006-02x
10	Lever - long Lever - short	6161 050 004-02x -	6161 065 004-02x -	6161 080 004-02x -	6161 100 004-02x -	6161 125 004-02x -	6161 150 004-02x 6161 150 007-02x	6161 200 004-02x 6161 200 016-02x	6161 250 004-02x 6161 250 005-02x
11	Set screw	6161 050 021-020	6161 065 021-020	6161 065 021-020	6161 100 021-020	6161 125 021-020	6161 150 021-020	6161 200 021-020	6161 200 021-020
12	Weight	6161 050 005-02x	6161 065 005-02x	6161 080 005-02x	6161 100 005-02x	6161 150 005-02x	6161 150 005-02x	6161 150 005-02x	6155 080 003-02x
13	Dowel pin	8126 060 020-020	8126 060 020-020	8126 060 020-020	8126 060 020-020	8126 060 024-020	8126 060 020-020	8126 060 020-020	8126 060 024-020
14	Hexagon screw DIN933	8106 006 020-020 M6x20	8106 006 030-020 M6x30	8106 006 030-020 M6x30	8106 008 030-020 M8x30	8106 008 035-020 M8x35	8106 008 050-020 M8x50	8106 008 060-020 M8x60	8105 010 070-020 M10x70
15	Hexagon screw DIN933	8106 006 025-020 M6x25 (4x)	8106 008 025-020 M8x25 (4x)	8106 008 030-020 M8x30 (4x)	8106 008 030-020 M8x30 (6x)	8106 012 030-020 M12x30 (6x)	8106 012 035-020 M12x35 (6x)	8106 012 040-020 M12x40 (8x)	8106 012 040-020 M12x40 (8x)
16	Disc DIN125	8071 064 001-020 A6,4 (4x)	8071 084 001-020 A8,4 (4x)	8071 084 001-020 A8,4 (4x)	8071 084 001-020 A8,4 (6x)	8071 130 001-020 A13 (6x)	8071 130 001-020 A13 (6x)	8071 130 001-020 A13 (8x)	8071 130 001-020 A13 (8x)
17	Flange	6161 050 001-020	6161 065 001-020	6161 080 001-020	6161 100 001-020	6161 125 001-020	6161 150 001-020	6161 200 001-020	6161 250 001-020
18	Sensor mounting	-	-	6161 080 061-020	6161 100 061-021	-	6161 150 065-020	6161 200 061-021	6161 250 091-020
19	Heating cartridge	8615 481 001-000							
		2x	2x	2x	2x	2x	4x	4x	4x

Code Material Exterior Surfaces: xxxxx xxx xxx-020 - 1.4301 - bright turned
 xxxxx xxx xxx-021 - 1.4301 - E-polished
 xxxxx xxx xxx-022 - 1.4301 - unpolished, glass-bead blasted

13. Performance chart

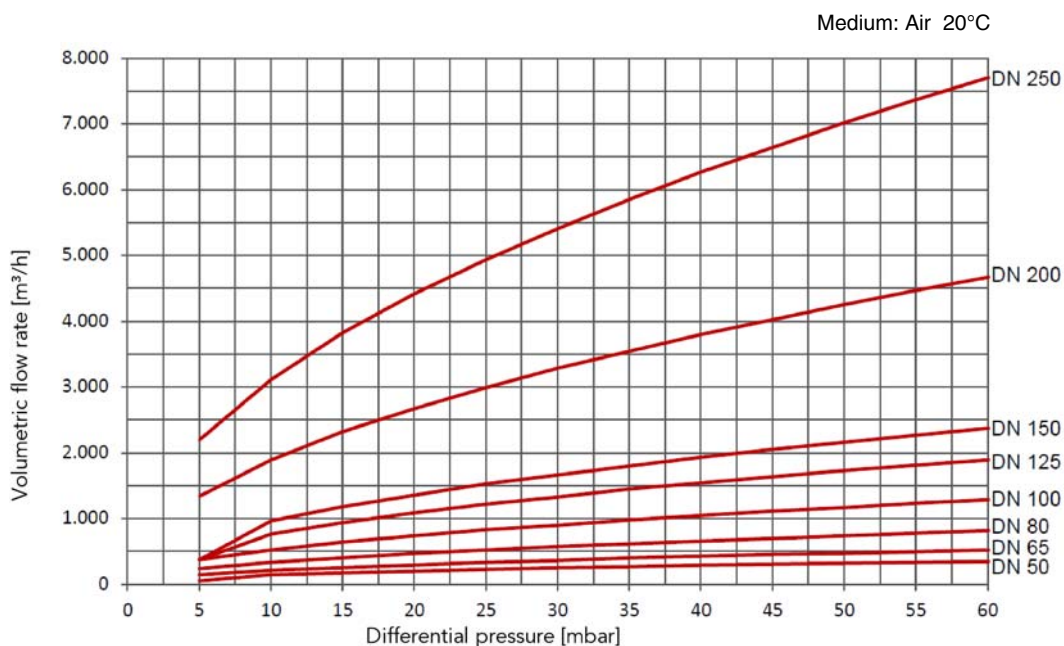


Diagramm. 1